May 17, 2001

Donna Wieting, Chief,
Marine Mammal Conservation Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3226

Dear Ms. Wieting:

Hello. I urge you and the NMFS to take the right and lawful action and turn down the U.S. Navy's request for a Letter of Authorization (LOA) for the take of small numbers of marine mammals by harassment incidental to Navy operations of Low Frequency Active (LFA) Sonar.

In order to issue the LOA and issue final regulations governing the take, the NMFS must determine that the taking will have a negligible impact on the affected species and stocks of marine mammals, will be at the lowest level practicable, and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses.

But basic physics and biology and evidence obtained from past use by the U.S. Navy of powerful underwater sound waves indicate the use of LFA Sonar will most certainly have a very significant impact on the species of marine mammals that encounter these massive sound waves.

The Navy has given a figure of sounds as loud as 235 decibels generated by massive sound transmitters towed behind TAGOS-class ships. That is a massive amount of noise being transmitted. The noise level of a jet engine is about 120 decibels. Though 235 decibels is 115 decibels louder than 120 decibels, it is much more than double the power of 120 decibels. IN FACT, 235 DECIBELS IS 300 BILLION TIMES MORE POWERFUL THAN THE 120 DECIBELS PUT OUT BY A JET ENGINE!!!

(Every increase of 10 decibels of a sound wave is a ten-fold increase of the power of the sound wave (thus a 130 decibel sound is 10 times more powerful than a 120 decibel sound). An increase of 20 decibels increases the power in the sound wave by 100 times (thus a 140 decibel sound is 100 times more powerful than a 120 decibel sound). An increase of 30 decibels

increases the power in the sound wave by 1,000 times (thus a 150 decibel sound is 1000 times more powerful than a 120 decibel sound) and so on.)

Undeniable evidence that high-power "active" sonar systems can and do kill marine animals emerged in March 2000, when beach strandings of four different species of whales and dolphins in the Bahamas coincided with a Navy battle group's use of extremely loud active sonar there. A National Marine Fisheries Service and Navy investigation established with virtual certainty a connection between the strandings and the sonar – and that active-sonar system put out mid-frequency sound, which generally does not travel as far as LFA (thus making the area affected by LFA larger).

Although active sonar has been suspected in previous strandings, analysis of the inner ears of several dead whales enabled scientists to confirm, for the first time, the dangerous role of active sonar to a level of certainty that even the Navy could not ignore. All but one of the whales suffered hemorrhages in the inner ear, almost certainly the result of a sonic blast. And in February 2001, a marine scientist observed that at least one of the whale species that stranded in the Bahamas had virtually disappeared from the area, raising questions about impacts well beyond the initial strandings and deaths.

According to the Navy, **each one of the LFA system's long array of transmitters can generate 215 decibels of sound, a level millions of times more intense than is considered safe for human divers; after several hundred meters, the sound waves produced by the array converge, boosting the noise level to an equivalent of more than 240 decibels. The power of a 240 decibel sound wave is 1 trillion (!!!) times greater than that of a 120 decibel sound wave put out by a jet engine!**

In 1991, scientists produced a loud, low-frequency signal off the coast of Heard Island in the southern Indian Ocean, and found that it was still detectable off the West Coast of the United States. That signal was effectively 100 times less powerful than LFA's. IT IS PREPOSTEROUS TO BELIEVE THAT SOUNDS 100 TIMES MORE POWERFUL THAN SUCH A SIGNAL WILL NOT KILL AND SEVERELY DAMAGE MILLIONS OF MARINE MAMMALS THROUGHOUT THE THOUSANDS OF MILES THE WAVES TRAVEL.

In late January, the Navy released its Environmental Impact Statement, which according to law should be a "rigorous and objective evaluation" of environmental risks. Yet the Navy's study fails to answer the most basic questions about its controversial system: How will LFA affect the long-term health and behavior of whales, dolphins and hundreds of other species? Taking place as it does over an enormous geographic area, what effect might it have on marine populations? Common sense and basic physics and biology say that signals 1 trillion times more powerful than the enormous sounds put out by a jet engine will have a devastating effect on the marine mammal species no more than hundreds of miles a way.

Whales use their exquisitely sensitive hearing to follow migratory routes, locate one another over great distances, find food and care for their young. Noise that undermines their ability to hear can threaten their ability to function and survive. A deaf whale is a dead whale. But an even bigger concern is the potential long-term impact that the Navy's LFA system might have on the behavior and viability of entire populations of marine mammals.

Sound has been shown to divert bowhead and gray whales and other whales from their migration paths, to cause sperm and humpback whales to cease vocalizing, and to induce a range of other effects, from distressed behavior to panic. A mass stranding of beaked whales off the west coast of Greece in 1996 has been associated with an LFA-type system being tested by NATO. And last year's whale deaths in the Bahamas add further evidence of the risks of intense active sonar.

The science and past evidence indicates quite clearly and unequivocally that the incredibly large magnitudes of the sound waves the Navy would put out in the ocean would kill and damage severely millions of marine mammals because no mammal (including people) is built to withstand such power.

I ask that you and the NMFS do what the law and the science calls you to do and turn down the U.S. Navy's request for a Letter of Authorization (LOA) for the take of small numbers of marine mammals by harassment incidental to Navy operations of Low Frequency Active (LFA) Sonar.

Thank you,

William Crowley

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